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(71)Applicant : HITACHI LTD

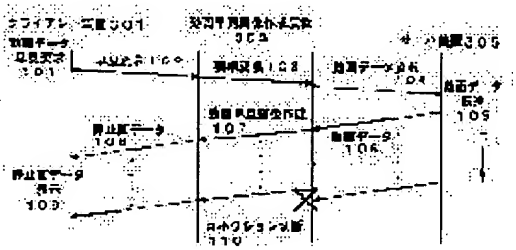
(72)Inventor : TOMOKANE TAKEO
KOHIYAMA TOMOHISA
KUWABARA YASUYUKI

(54) MOVING IMAGE CHART PREPARING DEVICE, MOVING IMAGE CHART PREPARING METHOD AND MOVING IMAGE DATA RETRIEVAL SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To facilitate retrieval of moving image data by displaying the contents of moving image data on a network as a still picture at a client device.

SOLUTION: A client device 301 outputs the request of preparation from moving image data to still picture data to a moving image chart preparing device 303. The moving image charge preparing device 303 accepts the chart image preparing request from the client device 301, extracts the frame of moving image data from the moving image data transferred from a server device 305 according to predetermined extraction rules, and prepares encoded still picture data concerning the extracted frame. The prepared still picture data are transferred to the client device 301. When using a motion picture expert group(MPEG) for the encoding system of moving image data and using a joint photographic expert group(JPEG) for the encoding system of still picture data to be outputted, for example, the frame for I pictures in the data of MPEG can be turned into still picture data.



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CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] In case this invention transmits the video data encoded based on a certain animation coding method, it relates to the system using an animation Hayami image listing device equipped with the function to change a video data into still picture data for Hayami of animation retrieval, and its equipment.
[0002]
[Description of the Prior Art] When the amount of data accumulates a vast quantity of video datas in are recording media, such as a hard disk, (record) or generally transmits them through communication lines, such as the Internet, a video data is encoded beforehand and the amount of data is reduced. There is MPEG (Motion Picture Experts Group) as a coding method of the video data standardized internationally. This coding method is a data compression method of a video data which used processing of inter-frame predicting coding containing a motion compensation, DCT (Discrete Cosine Transform: discrete cosine conversion), quantization, and Huffman coding as the base. The above-mentioned technique is explained by the "newest MPEG textbook" (incorporated company ASCII) in full detail.
[0003] Moreover, the Internet has spread widely with the advent of WWW (World Wide Web) in recent years. WWW is service which enables playback of graphical interface and voice by the still picture, or an animation by the WWW client, when a WWW client accesses the hypertext which a WWW server offers. This is realized by making multimedia data, such as image data and voice data, link to the hypertext which a WWW server offers. JPEG (Joint Photographic Experts Group) and GIF (Graphical Interchange format) are in the coding method frequently used as one of the linked image data of the. This JPEG is the international standards of the coding method of natural image data, and is using processing of DCT, quantization, and Huffman coding as the base. Moreover, GIF is the still picture coding method which CompServ of U.S. personal computer communications advocated, and is using LZW as the base. The above-mentioned technique is explained by "Graphics File Format" (McGraw-Hill) in full detail. Many WWW clients are standardly equipped with the function which displays the still picture data of this JPEG and GIF.
[0004] The reasonable typical example of a configuration to which a WWW client accesses drawing 10 through the Internet at a WWW server is shown. As for the provider to whom a WWW client and 202 perform public lines, such as an ISDN circuit and an analog network, and, as for 203, 201 performs the connection service of the Internet, and 204, in drawing 10 , the Internet and 205 are WWW servers.
[0005] In order for the WWW client 201 to access the WWW server 205, dialup connection is first made to a provider 203 using a public line. After this connection, the WWW client 201 can access the WWW server 205 through a public line 202 and the Internet 204, and can receive the contents of the hypertext of the WWW server 205. Recently, the case where a video data like MPEG is memorized to the WWW server 205 is increasing.
[0006]
[Problem(s) to be Solved by the Invention] As compared with JPEG of the still picture data mentioned above, the amount of data of MPEG which is a video data is enormously large. For example, by MPEG data of 30 frames, it becomes the abbreviation 1M bit amount of data per second for 1 second by 352x240 pixels. Generally, the data transfer rate of the network between the WWW server 201 and a provider 203 is high-speed like for example, 1.5Mbps(es) (bps:bits per second). However, at a public line, about 33 Kbps(es) and an ISDN circuit are also low speeds comparatively with 64Kbps(es) in an analog network. If a dialup user accesses the data of MPEG, a public line will serve as a bottleneck and the video data for 1 second will become arrives 15 seconds or more at this thing. For this reason, in accessing many MPEG data by retrieval of MPEG data etc., there is a problem of taking time amount very much.
[0007] Then, the technical problem of this invention is to offer the animation Hayami image listing device which creates the still picture data for video data Hayami, the animation Hayami image creation approach, and the animation data retrieval system using it so that retrieval of the contents of the video data may become easy.
[0008]
[Means for Solving the Problem] A reception means for this invention to be an animation Hayami image listing device which creates the encoded still picture data from the encoded video data, and to receive the demand of creation of said still picture data from said video data in order to solve the above-mentioned technical problem, When said demand is received with said reception means, it has a creation means to create said encoded still picture data, and a transfer means created with said creation means to transmit the encoded still picture data, from said encoded video data. Moreover, when creating said encoded still picture data, said creation means extracts the frame of a video data from said encoded video data according to the extract regulation defined beforehand, and creates said encoded still picture data about the extracted frame concerned.
[0009] Moreover, it can have further a receiving means to receive said video data, and said creation means can use for said still picture data the video data received with said receiving means in creation. Or it can have further a storage means to memorize said video data, and said creation means can use for said still picture data the video data memorized with said storage means in creation.
[0010] Moreover, a transfer means may be transmitted to client equipment and you may make it transmit it to peripheral devices, such as a display and a printer, through a network.
[0011] Moreover, a creation means extracts one frame from two or more frames at the time of arranging in order of animation display of said video data for every frame number defined beforehand, and you may make it create said encoded still picture data about extracted each concerned of one frame. Moreover, said creation means may be compressed with the compressibility which defined the still picture data of

said extracted frame beforehand, and may be carried out as [change / into the still picture data with which it encoded for one frame / each compressed still picture data concerned].
[0012] According to this invention, the still picture data for video data Hayami can be created, and retrieval of the contents of the video data becomes easy.
[0013] Moreover, the transfer rate in said transfer means from two or more frames at the time of putting said creation means in order according to the time sequence at the time of displaying said video data, For every transfer time for one frame of said still picture data which become settled according to the amount of data of said still picture data for one frame By extracting the frame of the video data corresponding to one frame of said still picture data, and creating said encoded still picture data about each of the extracted frame concerned It becomes possible to make it synchronize with the time sequence of the frame at the time of displaying a video data, and to see a still picture.
[0014]
[Embodiment of the Invention] The gestalt of operation of this invention is explained with reference to a drawing.
[0015] In the gestalt of the 1st operation, the animation data retrieval system which creates the still picture data for Hayami from a video data is realized by the system configuration as shown in drawing 1 . In drawing 1 , an animation data retrieval system is equipped with the client equipment 301 which requires the Hayami image of a video data, the animation Hayami image listing device 303 which creates the image data for Hayami of an animation, and the server equipment 305 which supplies a video data, and each is connected by the communication networks 302 and 304 which contain a public line, LAN, the Internet, or two or more sorts of them. The detail of the animation Hayami image listing device 303 is mentioned later.
[0016] Generally in drawing 1 , the data transfer capacity (rate) of a communication network 302 is later than the data transfer capacity of a communication network 304. For this reason, a demand of the user who wants to act as Hayami of the video data occurs. With the gestalt of operation of the 1st of this invention, in the animation Hayami image listing device 303, such a demand is received and the still picture data which created and created still picture data are transmitted to client equipment 301 from a video data.
[0017] Below, the sequence in the animation data retrieval system of the gestalt of operation of the 1st of this invention is explained with reference to drawing 2 . Drawing 2 is an explanatory view showing the procedure of the request data in an animation data retrieval system. In drawing 2 , the time-axis is taken downward. In drawing 2 , processings 101 and 109 show the processing in client equipment 301, data 102 and 108 show the data transmitted on a communication network 302, processings 103, 107, and 110 show the processing in the animation Hayami image listing device 303, and data 104 and 106 show the data transmitted on a communication network 304. Moreover, the detail of processing of the animation Hayami image creation 107 of the animation Hayami image listing device 303 used here is mentioned later.
[0018] Hereafter, a procedure is explained with reference to drawing 1 and drawing 2 .
[0019] First, client equipment 301 will transmit the Hayami requested data 102 to them at the animation Hayami image listing device 303, if a demand (processing 101) of Hayami of a video data is received to demands, such as retrieval of the video data of server equipment 305, from a user. Accessible information is included in the video data of the server equipments 305, such as information which shows the purport which is a demand of Hayami of a video data to this Hayami requested data 102, identification information of the server equipment 305 with which the video data is memorized, and an identifier of a video data. Moreover, when there are two or more classes of the creation approach of the Hayami image, you may also include required information, such as assignment of the creation approach, in the Hayami requested data 102. When it does not include the information which shows the class of this creation approach in the Hayami requested data 102, the animation Hayami image listing device 303 may choose the creation approach defined beforehand.
[0020] When using one head frame of the specified video data as the Hayami image as a class of the creation approach of the Hayami image, for example, four frames can be extracted every other second from a head frame, and the case where it sends according to the still picture coding format which defined it beforehand as still picture data (still picture data for one frame) of one sheet etc. can be defined beforehand. Thus, said encoded still picture data are created about the frame which extracted and extracted the frame of a video data according to the extract regulation defined beforehand.
[0021] Moreover, when creating the Hayami image of one sheet on the display screen using two or more frames, 3-6 frames are desirable. Moreover, for example, the frame of the number of sheets which defined beforehand the frame of a before [from a head frame / the last frame] at equal intervals (every frame number defined beforehand) may be extracted, and the approach of changing the extracted frame into still picture data, respectively may be used.
[0022] Moreover, the approach of having the scene change detection function to detect that the inter-frame scene (scene) of a video data changed, extracting a frame when a scene changes and changing the extracted frame into still picture data by this function may be used. A scene change detection function extracts a next frame in time between two adjoining frames noting that a scene changes, in being beyond the threshold that total of the difference in each location of the inter-frame color histogram which computes a color histogram and adjoins defined beforehand for each [which was put in order in order of animation display] frame of every. Thereby, the case where a color histogram changes rapidly is detectable as change of a scene.
[0023] Moreover, when the animation Hayami image listing device 303 chooses the creation approach defined beforehand, one of the creation approaches mentioned above is defined beforehand, and also you may make it decide the creation approach according to the data transfer capacity of a communication network 302. This is effective when the data transfer time of a communication network 304 is quicker enough than the data transfer rate of a communication network 302. for example, a video data -- 352(pixel) x240(pixel) x -- suppose that still picture data were encoded by JPEG and the communication network 302 had the data transfer capacity of 33.6Kbps(es) in the image size of 3 (RGB3 color) = about 253 K bytes. Since the compressibility of JPEG is generally called about 1/20 to the subject-copy image, in this case, the image size of still picture data is set to 12 K bytes, and becomes abbreviation 100K bits. In this case, if 100K-bit still picture data are transmitted by 33.6Kbps, the transfer time will take about 3 seconds. For this reason, if the still picture of one sheet is created and transmitted every 3 seconds from a video data, in a client, it will become possible to see a still picture in the form near the time sequence of the frame of a video data.
[0024] Moreover, for example, the bit rate of a video data encodes in the image size of 352 (pixel)x240 (pixel) by about 1.2 Mbps(es), and still picture data encode by JPEG, and suppose that the communication network 304 had 400Kbps(es) and the communication network 302 had the data transfer capacity of 33.6Kbps(es). In this case, if a video data is transmitted to the animation Hayami image listing device 303 by 400Kbps(es) through a communication network 304 from server equipment 305, it will take the 1.2M bit video data for 1 second about 3 seconds to arrive. Moreover, if it compresses by JPEG, since the image size of still picture data will become abbreviation 100K bits like

the above-mentioned example, it takes about 3 seconds to transmit the still picture data of one sheet. Therefore, one frame is extracted from the data for 1 second of a video data, and if still picture data are created and transmitted, in client equipment 301, Hayami can do it on real time to the time amount to which a video data is transmitted from server equipment 305. When the data transfer capacity of a communication network 302 or a communication network 304 changes dynamically like networks, such as the Internet, the function which supervises a data transfer rate is prepared, the frame number extracted in accordance with a data transfer rate and an extract time interval may be made to change, and the selection approach may be changed.

[0025] In drawing 2 , the animation Hayami image listing device 303 receives this Hayami requested data 102, changes this demand into the Request to Send of the video data to server equipment 305 (processing 103), and transmits the video data demand 104 for specifying the identifier of a video data and requiring transmission of a video data to the specified server equipment 305.

[0026] With server equipment 305, the video data demand 104 is received, the connection for the animation Hayami image listing device 303 and animation data transfer is stretched, and the encoded video data corresponding to the demand is transmitted (processing 105). As for the transmitted video data 106, transmitting all, since there is much amount of data enormously compared with a demand etc. takes time amount to some extent according to the data transfer capacity of a network 304.

[0027] If it begins to receive a video data 106, from the data which already won popularity, according to the creation approach of the specified Hayami image, the animation Hayami image listing device 303 will extract the coded data of a frame, and will create an animation Hayami image (processing 104). When the creation approach of the Hayami image is not specified with the Hayami requested data 102, the creation approach beforehand defined by the animation Hayami image listing device 303 is followed.

[0028] The animation Hayami image listing device 303 transmits the created still picture data 108 to client equipment 301. Moreover, when creation of the still picture data 108 is completed, the connection of the server equipment 305 and the animation Hayami image listing device 303 which have transmitted the video data 106 is cut (processing 110). When the animation Hayami image listing device 303 is equipped with the maintenance function which carries out the cash advance of the video data, even if creation of the still picture data 108 is completed, it may not be made not to perform processing which cuts the connection of processing 110 until it receives and carries out the cash advance of all the video datas.

[0029] Reception of the still picture data 108 expresses the still picture data 108 on a display etc. as client equipment 301. When there are two or more still picture data 108, it can indicate by sequential from the still picture data 108 of the part which finished receiving. By this, a user gets Hayami of a video data (processing 109). When two or more frames are included in the still picture data 108, how for it to be visible with a format of the still picture data 108 differs. For example, since the still picture data of two or more sheets are storable to 1 data unit in a format of coding of still pictures, such as GIF and Motion-JPEG, each of the still picture data of two or more sheets can be shown as the same display field like an animation, when one sheet indicates at a time by sequential. Moreover, for example, when the still picture data of four sheets are stored to 1 data unit in the format of coding of still pictures, such as GIF, as drawing 3 shows, the still picture data of four sheets can be arranged and displayed on the one display screen. Moreover, as shown in drawing 4 , it can stand in a line perpendicularly and you may make it display four still pictures on the display screen for example, in a format of coding of still pictures, such as JPEG. In this case, it can arrange so that a still picture may be displayed on the order which received sequentially from the upper part on the display screen.

[0030] Below, the configuration of the animation Hayami image listing device 303 is explained. The example of a configuration of the animation Hayami image listing device 303 is shown in drawing 5 . In drawing 5 , the animation Hayami image listing device 303 is equipped with CPU801 which performs predetermined processing according to a program, the bus 802 for delivering data, control, etc., the stores 803, such as a hard disk, a floppy, CD-ROM, MO, etc. which memorize a program, data, etc., the main storage 804 in which a program and data are stored, such as memory, and the communication controllers 805, such as a network board and a modem. Each above-mentioned component of each other is connected by bus 802 so that signal transduction may be possible. Moreover, the animation Hayami image listing device 303 shall transmit and receive other equipments connected with this communication network 806, and data and a program through a communication network 806 like the telephone line or LAN. This communication network 806 is equivalent to the communication networks 302 or 304 shown in drawing 1 . You may make it have two or more communication controllers 805. Moreover, the animation Hayami image listing device 303 can be further equipped with the output sections, such as a display and a printer, and you may make it output the created still picture data from the output section.

[0031] In addition, storage 803, main storage 804, and a communication controller 805 are controlled according to the program performed by CPU801 of the animation Hayami image listing device 303.

[0032] In drawing 5 , the program for creating an animation Hayami image and the video data used as a processing object are sent out from other equipments through a communication network 806, and are received in the animation Hayami image listing device 303. Moreover, these programs and video datas are stored in storage 803 or a storage, and when required, they may be made to be read. Moreover, the created still picture data are stored in storage 803. Or the created still picture data are sent out to other equipments, such as client equipment 301, through a communication network 806. Moreover, there may be the communications control control unit 805 and two communication networks 806 or more respectively. When it has two or more, the communications control control unit 805 of an input only and an output only may be formed.

[0033] Moreover, if a video data begins to be inputted into a communication controller 805, by the animation Hayami image listing device 303, the still picture data which carried out sequential coding from the inputted video data can be created, and it can operate in pipeline so that the sequential transfer of the made still picture data may be carried out from a communication controller 805.

[0034] Next, the flow chart of the program of animation Hayami image creation processing in which it operates on an animation Hayami image listing device as shown in drawing 5 is explained in detail. The flow chart of the program of animation Hayami image creation processing is shown in drawing 6 . In the flow chart shown in drawing 6 , it shall be based on the method beforehand determined as the coding method of the video data inputted, and the coding method of the still picture data to output, and can apply to various methods.

[0035] In drawing 6 , if the Hayami requested data 102 is outputted from client equipment 301, the Hayami requested data 102 will be received with CCE 805 through a communication network 806 (step 901). The animation Hayami image listing device 303 decodes the contents of the Hayami requested data 102, and recognizes the Hayami image creation approach specified as the Hayami demand of a video data, identification information, such as an identifier of a video data, and the identification information of the server equipment which holds the video data. The video data demand 104 is created based on the identification information of a video data, and the video data demand 104 is outputted through a communication network 806 to the server equipment 305 which holds a video data (step 902).

[0036] According to the demand of a video data, server equipment 305 leads communication network 806, stretches the connection for data

transfer with the animation Hayami image listing device 303, and begins an animation data transfer. In the animation Hayami image listing device 303, if animation data transfer starts, the video data is received, and processing as shown below will be performed, continuing reception of a video data after that which it begins (step 903) to store in main storage 804 or a store 803.

[0037] The size of an image is read from the already sent video data, the size of a still picture is determined according to the Hayami image creation approach specified as the size of the video data, and the size information is outputted to a client (step 904). For example, suppose that the size of the image of an animation was 352 (pixel)x240 (pixel). When creating a still picture only from one frame of an animation, in order to make it display as size of a still picture is set to 352 (pixel)x240 (pixel), and size of a still picture is set to 704 (pixel)x480 (pixel) in order to make it display as four frames is extracted from a video data and it is shown in drawing 3 , and shown in drawing 4 , size of a still picture is set to 352 (pixel)x960 (pixel). The information on this size is stored in the frame format of the still picture data defined beforehand with a header, and it is outputted to client equipment 301. Moreover, a header is added and the still picture data which are mentioned later and which were created by coding are transmitted as one still picture data.

[0038] Next, in order to extract the frame according to the specified selection approach from the already stored video data 163, storing a video data 106, the coded data of the frame is searched (step 905). As mentioned above, an extract frame may be decided by the approach beforehand defined by the animation Hayami image listing device 303, and may be specified with the Hayami requested data 102. When the video data of the frame which should still be extracted is not received, processing is not performed until it receives the frame.

[0039] Next, the frame which was searched and was extracted from the encoded video data is decrypted (step 906), and it encodes again by the coding method of the still picture which defined the decrypted image beforehand (step 907). And it is begun via a communication network 806 to transmit the encoded still picture data to client equipment 301 (step 908). If two or more frames are used as the still picture of one sheet, processing will be repeated until coding for the frame is completed (step 909). If it ends, the connection who transmits a video data will be cut from server equipment 305, and an animation data transfer will be interrupted (step 910).

[0040] If the cash advance of the video data is carried out to main storage 804 or storage 803, step 910 will not have the need. Moreover, when the animation Hayami image listing device 303 is storing the video data by having already carried out the cash advance of the video data etc., processing of steps 902, 903, and 910 is unnecessary. In that case, what is necessary is to read a video data from the memory 804 and the store 803 grade which are storing the video data, and just to process steps 904-909.

[0041] Moreover, the Hayami image of a video data transmitted via the communication network 806 can be received, and it can express on a display etc. as client equipment 301 as a still picture.

[0042] By processing, as explained above, client equipment 301 can display the Hayami image of a video data with a still picture by the animation Hayami image listing device's 303 creating still picture data from a video data, and transmitting it.

[0043] Below, the 2nd operation gestalt of this invention is explained. Although the 2nd operation gestalt is the same configuration as the 1st operation gestalt, the flow of processing of an animation Hayami image listing device differs. The flow chart of the flow of processing of the animation Hayami image listing device in the 2nd operation gestalt is shown in drawing 7 . In this flow chart, MPEG shall be used for the coding method of a video data, and the frame made into the coding method of the still picture data to output in the data of MPEG at still picture data using JPEG shall be restricted to I picture. I picture is the frame which can be decrypted even when there is none of other frames, and when it is MPEG, one sheet is usually in 12-15 frames. On the other hand, it is called P picture and B picture to the frame encoded by the prediction from other frames, and these frames cannot be decrypted only by the frame coded data. The procedures of a decryption of I picture are the Huffman decryption, reverse quantization, and reverse DCT. On the other hand, the procedures of coding of JPEG are DCT, quantization, and Huffman coding. With this 2nd operation gestalt, reverse DCT of a decryption of MPEG and DCT of JPEG coding are omitted, and still picture data are encoded. In the flow chart shown in drawing 7 , especially about the step of the flow chart shown in drawing 6 , and a same sign, as long as there is no explanation, it shall operate like the actuation in drawing 6 .

[0044] In drawing 7 , step 903 is processed like drawing 6 .

[0045] In the case of JPEG data, in step 904, information required for the decryption of a quantization table, the Huffman table, etc. other than size is included as header information of the still picture data to output. Those tables use the table prepared beforehand. As for the image size in the case of this JPEG, it is desirable to make it the image size when arranging a frame perpendicularly, as shown in drawing 4 .

[0046] Next, I picture is searched from the video data of stored MPEG (step 1001). Since 4 bytes of unique code showing the head of the encoded frame was searched and picture type information can be started after the code in order to find the frame of I picture from the data stream of MPEG, it can judge whether the frame is I picture by seeing it. For 1 second, in the case of MPEG, it is 30 frames, and many I pictures of one sheet are in 15 frames. Therefore, what is necessary is just to carry out the sequential extract of the I picture, when using four frames as a still picture every other second, for example. Moreover, when there is no I picture in a part to extract, nearest I picture etc. may be substituted.

[0047] Next, the Huffman decryption is carried out according to the Huffman table on which the I picture is specified by MPEG (step 1002).

[0048] Next, reverse quantization is performed to the data which the Huffman decryption finished (step 1003). What is defined within the stream of MPEG is used for the quantization table used for reverse quantization, and a quantization characteristic value at this time. Then, when the quantization table is not defined, a default quantization table is used.

[0049] Next, JPEG is quantized shortly (step 1004). The quantization table at this time is defined beforehand. The quantization table used here is added to header information, and is transmitted to client equipment 301.

[0050] Finally, Huffman coding of JPEG is performed (step 905). The Huffman table at this time is defined beforehand. The Huffman table used here is added to header information, and is transmitted to client equipment 301.

[0051] In the processing shown in drawing 7 , the quantization table which is using the frame which MPEG data extract was decided, and when the table is known before processing of step 904, steps 1003 and 1004 can also be skipped by making the quantization table of JPEG in agreement with the quantization table of MPEG.

[0052] As explained above, according to the gestalt of the 2nd operation, about the part which is common by coding with a video data and still picture data, it can use as still picture data as it is, without decrypting a video data.

[0053] Below, the gestalt of the 3rd operation is explained. With the gestalt of the 3rd operation, the animation data retrieval structure of a system differs from the gestalt of the 1st and the 2nd operation. The example of the animation data retrieval structure of a system in the gestalt of the 3rd operation is shown in drawing 8 . 301, 302, and 303 are equipped with the same function as the thing of the same sign shown in drawing 1 in drawing 8 . In this configuration, the animation Hayami image listing device 303 shall accumulate the video data

which client equipment 301 requires. with the gestalt of the 3rd operation, the animation Hayami image listing device 303 holds a video data, and the case where the role of server equipment 305 is also boiled and twisted is explained.
[0054] It explains based on the example of a system configuration which shows the gestalt of the following operation [3rd] to this drawing 8 . The sequence in the animation data retrieval system of the gestalt of the 3rd operation is shown in drawing 9 . Moreover, in the system configuration of the gestalt of the 1st operation, also when the animation Hayami image listing device 303 has the function of a cash advance and has already carried out the cash advance of the video data of server equipment 305, it can process according to drawing 9 . In drawing 9 , the thing of drawing 2 and a same sign shall show the same processing, data, or a demand, respectively, and explains it briefly here. Hereafter, a procedure is explained.
[0055] First, if client equipment 301 receives the Hayami demand of a video data (processing 101), the Hayami requested data 102 is sent out to the animation Hayami image listing device 303 from client equipment 301. The animation Hayami image listing device 303 decodes this Hayami requested data 102 (processing 701), when the animation Hayami image listing device 303 has already held the video data demanded with this Hayami requested data 102, like the gestalt of the 1st operation, creates an animation Hayami image (processing 105), and transmits the still picture data 108 to client equipment 301. Hayami can do it by displaying the transmitted still picture data with client equipment 301.
[0056] Moreover, when the animation Hayami image listing device 303 carries out the cash advance of the video data demanded by the Hayami demand when the animation Hayami image listing device 303 was equipped with the function of a cash advance and has already held it, you may check [whether original data are updated and] to server equipment 305. When updated, the updated data are received and the same processing as the gestalt of the 1st operation is performed.
[0057] As mentioned above, client equipment 301 can see the Hayami image of a video data with a still picture by processing, as explained.

[0058] If the animation Hayami image listing device 303 is installed before [that data transfer capacity becomes low in a communication network while transmitting a video data to client equipment 301 from server equipment 305 according to the gestalt of the 1st and operation of the 2nd of this invention] a communication network, client equipment 301 can perform Hayami of a video data at a high speed with the still picture data to which it is sent [data] from the animation Hayami animation listing device 303, and comes. Moreover, the animation Hayami image listing device 303 which created the Hayami image can also mitigate the data total amount in a communication network by cutting the connection for animation data transfer with a server 305.
[0059] Moreover, according to the gestalt of each operation of this invention, Hayami as whom a motion of a video data understands the frame of a video data for two or more sheets by performing Hayami as one still picture data can do it. When displaying by one still picture data like especially JPEG, with client equipment 301, a target can do a display serially in order of time sequence by displaying still picture data [frame] perpendicularly. Since still picture data with little transmission capacity can be transmitted, the communication network connected with the client equipment 301 at this time can be efficiently transmitted rather than it transmits a video data as it is.
[0060]
[Effect of the Invention] According to this invention, in an animation Hayami image listing device, the still picture data for video data Hayami can be created and transmitted. Moreover, with client equipment, it can display by using the contents of the video data on a network as a still picture, and retrieval of a video data can be made easy.

[Translation done.]

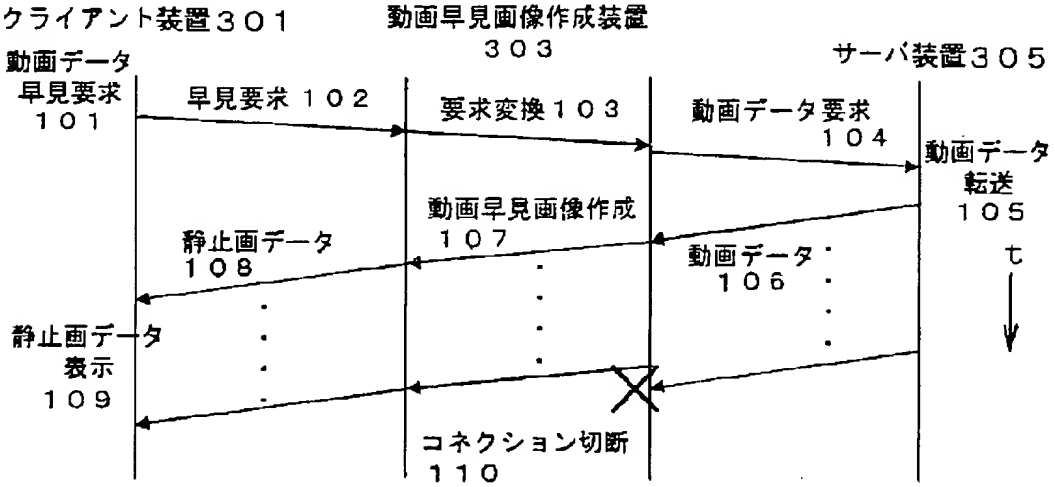
* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

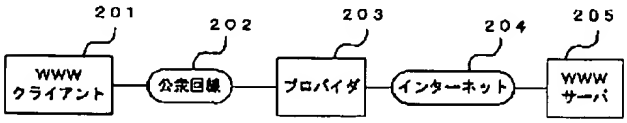
DRAWINGS

[Drawing 1]
動画データ検索システムの構成例（図１）

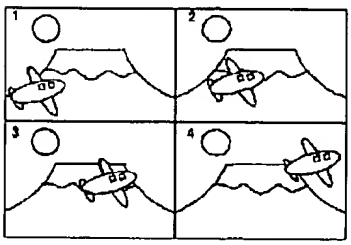
[Drawing 2]
第１の実施形態における処理手順（図２）



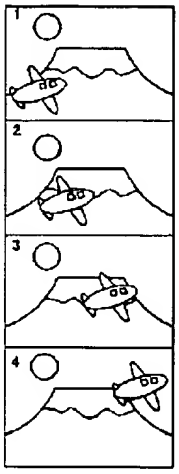
[Drawing 10]
WWWサーバアクセス例（図１０）



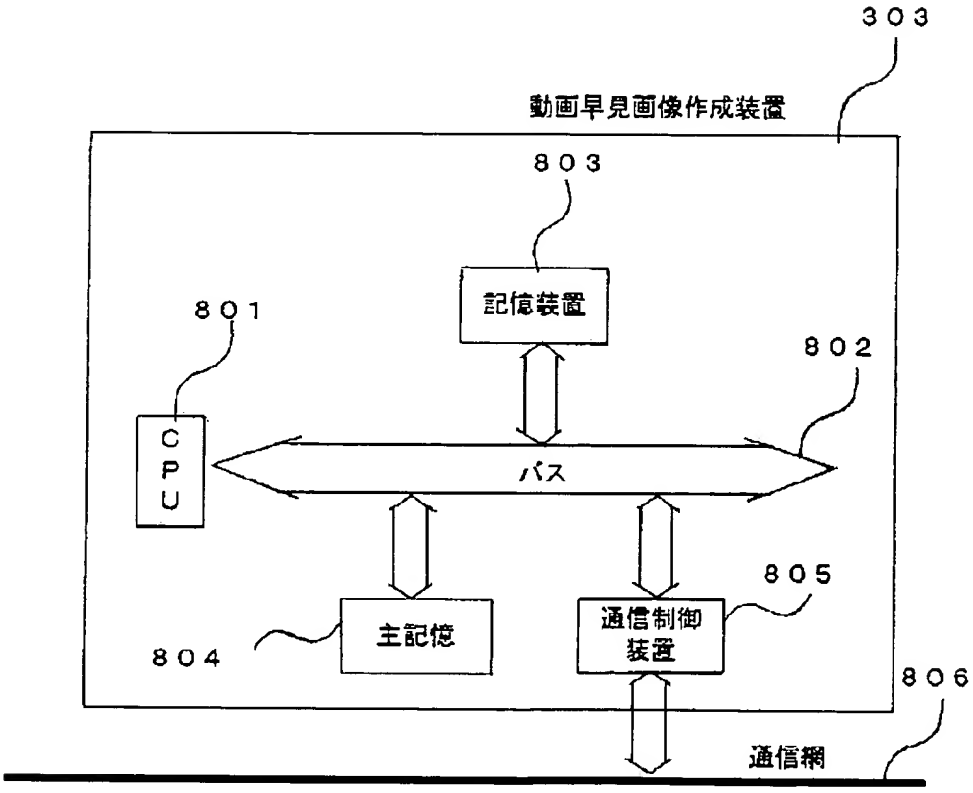
[Drawing 3]
静止画データ表示例（図３）



[Drawing 4]
静止画データ表示例（図４）

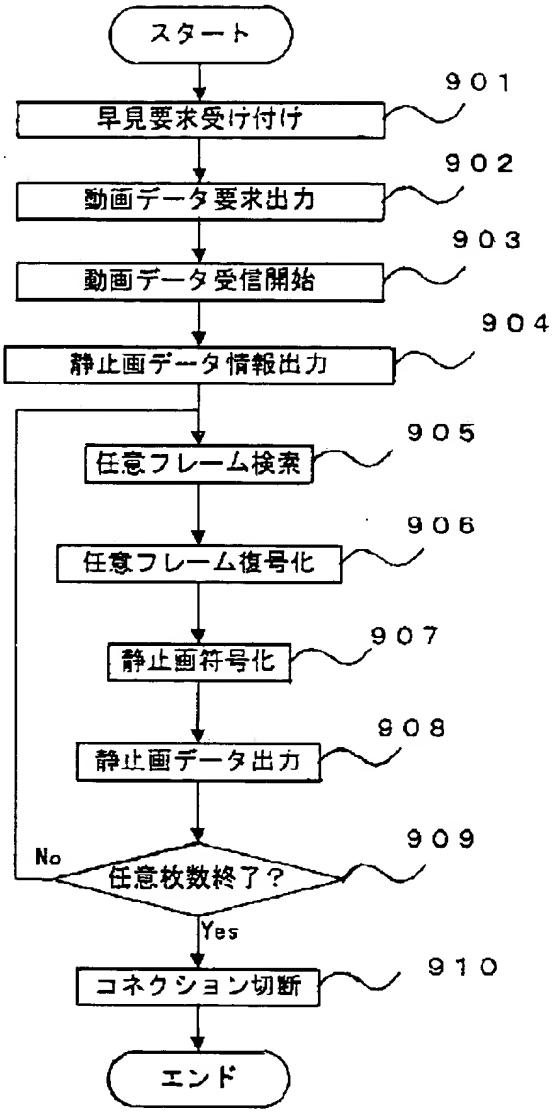


[Drawing 5]
動画早見画像作成装置構成例（図５）



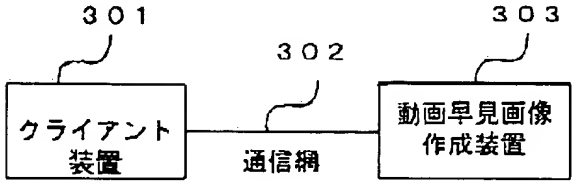
[Drawing 6]

第１の実施形態のフローチャート例（図６）



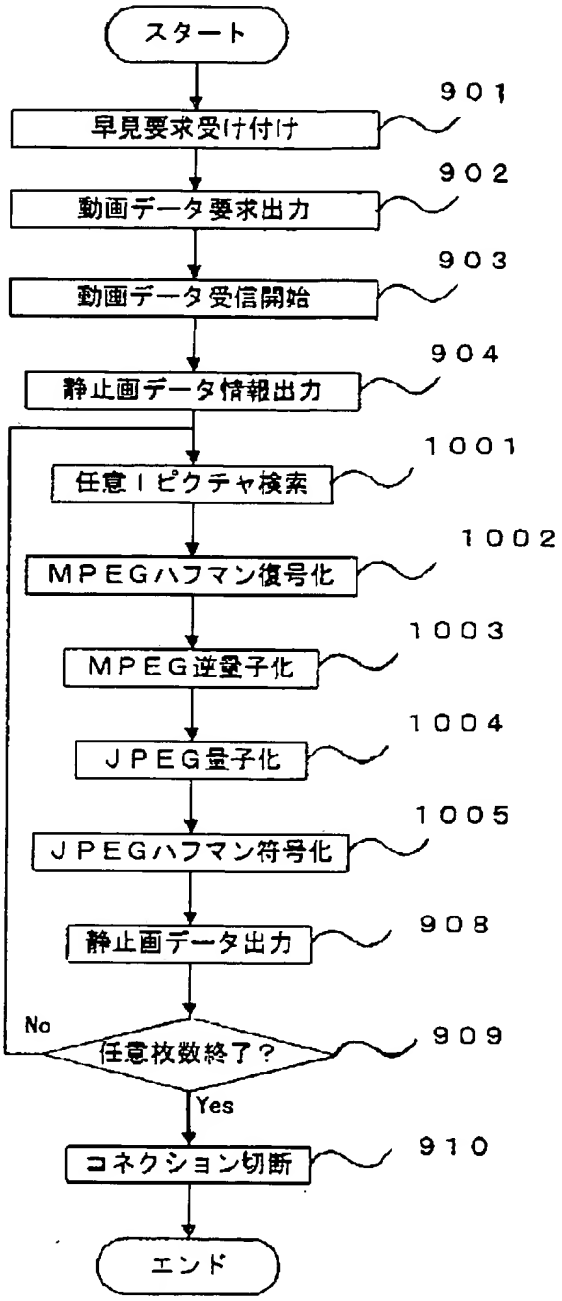
[Drawing 8]

動画データ検索システムの構成例（図８）



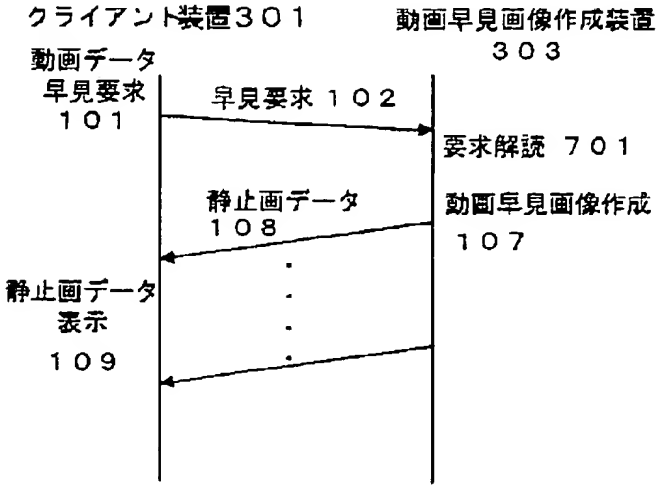
[Drawing 7]

第２の実施形態のフローチャート例（図 ７ ）



[Drawing 9]

第３の実施形態における処理手順例（図９）



[Translation done.]